WHAT IS CLAIMED IS:

1. Use of a composition in the manufacture of a medicament for exercise endurance, exercise efficiency, gait, locomotion, or balance, or a combination thereof, in a subject, wherein the composition comprises a therapeutically effect amount of an alpha-ketoglutarate.

2. The use of claim 1 for increasing exercise endurance in the subject.

3. The use of claim 1 for increasing exercise efficiency in the subject.

4. The use of claim 1 for improving gait in the subject.

5. The use of claim 1 for improving locomotion in the subject.

6. The use of claim 1 for improving balance in the subject.

7. The use of any one of claims 1 to 6 wherein the therapeutically effect amount alters secretion of at least one SASP factor.

8. The use of any one of claims 1 to 6 wherein the therapeutically effect amount reduces secretion of at least one SASP factor.

9. The use of any one of claims 7 or 8 wherein the SASP factors comprise an interleukin (IL), a chemokine, an inflammatory factor, a growth factor, a protease, an extracellular matrix component, or a combination thereof.

10. The use of any one of claims 7 or 8 wherein the SASP factors comprise IL-1β, IL-3, IL-6, IL-7, MIP-1β, TNF-α, CCL2, MMP3, or a combination thereof.

11. The use of any one of claims 7 or 8 wherein at least one senescent marker comprises $p16^{INK4a}$.

12. The use of any one of claims 7 or 8 wherein at least one senescent marker comprises $p21^{WAF1}$.

13. The use of any one of claims 1 to 12 wherein the therapeutically effect amount does not clinically affect formation of senescent cells.

14. The use of any one of claims 1 to 12 wherein the therapeutically effect amount does not clinically affect the number of senescent cells.

15. The use of any one of claims 1 to 14 wherein the medicament is configured to be administered twice daily.

16. The use of any one of claims 1 to 15 wherein the medicament is formulated into an orally administered form.

17. The use of any one of claims 1 to 16 wherein the subject has at least a 6 fold lower level of plasma alpha-ketoglutarate level compared to a control subject, where the control subject is at least 2 years younger than the subject.

18. The use of any one of claims 1 to 17 wherein the therapeutically effective amount is in the range from about 350 mg to 2000 mg, and where the alpha-ketoglutarate is calcium alpha-ketoglutarate or calcium alpha-ketoglutarate monohydrate, or a combination thereof.

19. The use of any one of claim 1 to 18 wherein the composition further comprises vitamin A.

20. The use of any one of claim 1 to 18 wherein the composition further comprises vitamin D3.

21. The use of any one of claims 1 to 17 wherein the composition comprises 500 mg of calcium alpha-ketoglutarate monohydrate, 450 mcg of retinyl palmitate, isomalt, vegetable wax, stearic acid, magnesium stearate, and silica.

22. The use of any one of claims 1 to 17 wherein the composition comprises 500 mg of calcium alpha-ketoglutarate monohydrate, 12.5 mcg (500 IU) of cholecalciferol, isomalt, vegetable wax, stearic acid, magnesium stearate, and silica.